THURSDAY, JULY 15, 1915.

NEW BOOKS ON BRITISH BOTANY.

(1) *The Potamogetons (Pond Weeds) of the British Isles.* By A. Fryer and A. Bennett. Illustrated by R. Morgan. Pp. x+94+60 plates. (London: L. Reeve and Co., Ltd., 1915.) Price £5 5*s.* net.

(2) *Floral Rambles in Highways and Byways.* By Rev. Prof. G. Henslow. Pp. 294. (London: S.P.C.K., 1915.) Price 6*s.* net.

(3) *A Pocket Synopsis of the Families of British Flowering Plants.* By W. B. Grove. Pp. vi+49. (Manchester: At the University Press; London: Longmans, Green and Co., 1915.) Price 1*s.* net.

(1) STUDENTS of British Botany and workers in general on pond weeds will welcome the appearance, after many days, of the completion of the monograph on British potamogetons which is associated with the name of the late Alfred Fryer. The monograph presents the results of an intimate study in their native habitats and extending over many years, of the species of one of the most critical of genera. In his home at Chatteris, in the fen country, Fryer was especially well situated for observing at first hand a large number of forms of this remarkably variable genus, and the retirement in which he lived, though a matter of regret to his botanical friends, gave the opportunity for close and uninterrupted study. The critical notes which accompany his very full description of the species, varieties, and forms are evidence of his thorough and painstaking methods, and the great value of his work is enhanced by the large series of beautifully prepared specimens numbering many hundreds which he bequeathed to the British Museum, where, in the Department of Botany, they will form a permanent record available for future use.

To the few botanists who were privileged to know Fryer it will be matter for regret that a brief account of his life was not included in the volume which records the results of his botanical work; the two were so intimately connected. At any rate, some explanation of the genesis and course of the work was due. No reference is made to the fact that three parts containing 56 pages of text and 36 plates were published in 1898 (two parts) and 1900, and that a fourth part, edited by Mr. A. H. Evans from Mr. Fryer's MS. appeared, with 13 plates, in 1913. The work was completed by the issue in March, 1915, of a concluding part by Mr. Arthur Bennett, with an introduction to the whole and a key to the species.

It was fortunate that Mr. Bennett, a friend of and co-worker with Fryer, and a botanist whose knowledge of our pond-weeds is unequalled, was able to complete the work. The volume as it stands, though a connected whole, thus represents three portions—an earlier portion, including seventeen of the total forty-two species and hybrids, which had been completed and published by Mr. Fryer before his death; a second portion, the difficult *lucens* group, which Mr. A. H. Evans has been able to edit from Fryer's MS. and published notes; and a third portion dealing with the grass-leaved group for which Mr. Bennett is solely responsible.

The text is well arranged and remarkably clear, though there is some want of uniformity in matters bibliographical. The work of the artist, Robert Morgan, is left to speak for itself. It is no detraction from the value of Fryer's work to emphasise the importance of the coloured plates, the great majority of which were drawn by Morgan from living plants supplied by the author; and there is no doubt that Morgan's untimely death in 1900 was a leading factor in the cessation of publication. The omission from the plates of the name of the species is to be regretted.

Apart from its value as a purely systematic work, the volume is of special interest as indicating methods of study and as throwing light on questions of variation and species-status in aquatic plants.

(2) It is difficult to realise when looking through Prof. George Henslow's latest volume that the author was an active botanist before most modern workers in the science were born. There is a freshness and juvenility about the series of rambles which form the subject of his eminently readable chapters, and we congratulate Prof. Henslow on the mental vigour which he retains with his fourscore years. In a series of fourteen chapters with titles such as "Along a Road's Sides," "By Hedges and Ditches," "Through Marsh-land," "In the Water," and others similar, he has brought together an amount of information about our commoner plants in a manner intelligible to any reader who has a slight knowledge of botany. Some of the more striking features of the plants characteristic of the various habitats are described, and interesting notes on their natural history, such as pollination, methods of climbing, etc., and on their distribution and folklore, are given. As was to be expected, the author seizes every opportunity to emphasise his view of

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the origin of plant-form and structure as a direct response to the stimulation of its environment. The book is well illustrated by blocks nearly all of which are old friends (though the source is rarely indicated; many are borrowed from Johns' "Flowers of the Field"). There are also a number of, generally poor, coloured plates.

(3) Mr. Grove's pocket synopsis of the families of British Flowering Plants is a systematic enumeration of the characters of these families arranged under their orders and larger groups, on the lines of the system adopted by Engler in his "Syllabus." It is carefully compiled and "is intended primarily to facilitate the determination of the families of British plants by students." Most students will, however, probably wish to proceed further than the family and will prefer to use handbooks already in existence which enable them to do this.

TEXT-BOOKS OF CHEMISTRY.

(1) *Intermediate Practical Chemistry for University Students.* By F. W. Atack. Pp. viii+204. (London: Sherratt and Hughes, 1914.) Price 4*s*. net.

(2) *The Manufacture of Organic Dyestuffs.* By Prof. A. Wahl. Translated by F. W. Atack. Pp. xiv+338. (London: G. Bell and Sons, Ltd., 1914.) Price 5*s*. net.

(3) *Outlines of Organic Chemistry.* A book designed especially for the General Student. By Dr. F. J. Moore. 2nd edition. Pp. xi+325. (New York: J. Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1914.) Price 6*s*. 6*d*. net.

(4) *Elementary Practical Chemistry for Medical and Other Students.* By J. E. Myers and J. B. Firth. Pp. viii+194. (London: C. Griffin and Co., Ltd., 1914.) Price 4*s*. net:

(5) *A Text-book of Inorganic Chemistry.* Vol. i. Part i., An Introduction to Modern Inorganic Chemistry. By Dr. J. N. Friend, H. F. V. Little, and W. E. S. Turner. Part ii., The Inert Gases. By H. V. A. Briscoe. Pp. xv+385. (London: C. Griffin and Co., Ltd., 1914.) Price 10*s*. 6*d*. net.

(1) THIS little volume presents in some respects an original method of treating practical chemistry. After the usual preliminary description of the wash-bottle and its applications, etc., a series of above one hundred little qualitative and quantitative experiments are introduced, the interpretation of which the student is expected to supply. These are excellent so far as they go, but an occasional grouping of the observed phenomena might have been introduced with advantage as a sort of sign-post to the student. The usual tables are, however, postponed until the student is conversant with "identifications" by the dry way. After a very full account of qualitative analysis by the wet way, which includes tests for the rare metals, a section is devoted to preparations of pure substances and to gravimetric and volumetric analysis. The book is, in short, a very useful compendium of practical inorganic chemistry, and for those who intend to become professional chemists it may be unreservedly recommended.

(2) This book on organic dyestuffs is a translation from the French of Prof. A. Wahl, who fills the chair of industrial chemistry in the University of Nancy. We have it on the authority of Dr. Knecht, who has written a short introductory notice, that it supplies a real want, and that it was, in fact, at his suggestion that "this excellent little book" was translated.

It deals essentially with the production of the dyes from the raw material, and includes an account of the distillation of coal tar and the manipulation of the intermediate products. It enters neither into the theory of organic chemistry nor into the application of the dyes to the fibre. The student is therefore recommended to equip himself beforehand with a substantial knowledge of organic chemistry. Moreover, the book does not profess to transform the student into a practical colour-maker, for few details of the actual manufacture or the character of the plant are supplied. We may presume, therefore, that he will receive the necessary practical training concurrently with the study of the text-book if he intends to enter this branch of industry. For we cannot conceive how any student of ordinary intelligence can commit to memory the description of such a variety of compounds, many of which possess highly complex formulæ, without some pegs of practical experimental work to hang his information on.

The publication of this little volume comes at an opportune moment, when it is highly desirable that the interest of young chemists should be stimulated in the direction of colour-making. It is noteworthy that at the end of the volume the list of books of reference which is given includes a substantial number of English and French, in addition to German authors.

(3) Dr. Moore's "Outlines of Organic Chemistry," published originally in 1910, has now reached a second edition. The new edition, whilst retaining the original character and arrangement, represents a thorough revision, and includes the description of a number of new substances of practical interest, namely, citric acid, the fulminates,

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